Problem Statement

For this lab you are required to read and understand the two C simulators in chapter 7.2.1 (8-bit instruction) and 7.2.2 (16-bit instruction).

Requirements

1. You should run **Both** simulators on your device, you will have to fill up the memory of your simulator with some data and instruction to run the code.

   For example: if you are going to test the 8-bit instruction CPU with this program :

   ```
   LDA  10
   ADD  1
   STA   10
   ```

   The memory should be

   ```
   {
   00001010,   // LDA 10
   01010001,   // ADD 1
   00101010,   // STA 10
   00000000,
   .
   .
   .
   00000010,  // value = 2 at memory[10]
   }
   ```

   Note this is only an example you can try it or you can come up with a better one.
   You are required to provide **different** examples for **each** simulator.

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2. For the second simulator (16-bit instruction), you are required to implement **3 Logical instructions** (e.g. AND, OR, XOR). Those implemented instructions **must** be included in your run example provided in requirement 1.

3. You will submit a report containing the following:
    a. The assembly code of the example you run on each simulator.
    b. The memory content on each simulator.
    c. The edited code for both simulators with comments for the new added instructions in the 16-bit instruction simulator (requirement 2).
    d. Screenshots of the output, just to make sure that the code ran successfully. (e.g print the value of D0 after each instruction)